

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Shahab M. Sayeedi Group Art Unit: 2616
Serial Number: 10/728,052 Examiner: Raj K. Jain
Filing Date: December 4, 2003 Confirmation Number: 8941
Docket Number: CE11765R
Title: Providing and Maintaining Forward Link Packet Data Service in a Mobile Communication System

AMENDMENT I

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Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

In response to the Final Office Action dated July 16, 2008, please enter the following amendments and consider the following remarks. No new matter is introduced by these amendments.

Amendments to the Claims begin on page 2.

Remarks begin on page 10.

Amendments to the Claims

- 1-14. (Cancelled)
15. (Currently Amended) A method for providing forward link packet data service to a mobile stations (MSs) station (MS) in a mobile communication system, the method comprising:
providing, by a source base station (BS), data for transmission to [[an]] the MS via a forward link;
receiving an indication that the MS intends to switch from a forward link of a serving cell to a forward link of a target cell for data transmission service;
determining whether that the target cell is presently available unavailable to provide data transmission service to the MS via the forward link of the target cell; and
sending an indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.
16. (Original) The method of claim 15, wherein receiving the indication that the MS intends to switch comprises receiving the indication by the source BS from the MS via the serving cell and wherein the source BS comprises the serving cell and is a serving BS of the MS.
17. (Original) The method of claim 15, wherein receiving the indication that the MS intends to switch comprises receiving the indication by the source BS from a serving BS and wherein the serving BS comprises the serving cell.
18. (Original) The method of claim 15, wherein receiving the indication that the MS intends to switch comprises receiving the indication by the source BS from a target BS and wherein the target BS comprises the target cell.

19. (Currently Amended) The method of claim 15 [[,]] wherein determining whether that the target cell is presently available unavailable to provide data transmission service to the MS via the forward link of the target cell comprises receiving an indication that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.
20. (Original) The method of claim 19, wherein receiving the indication that the target cell is presently unavailable comprises receiving the indication from the target cell.
21. (Original) The method of claim 20, wherein receiving the indication that the target cell is presently unavailable comprises receiving the indication from the target cell via a BSC-BTS signaling interface.
22. (Original) The method of claim 19, wherein receiving the indication that the target cell is presently unavailable comprises receiving the indication from a target BS.
23. (Original) The method of claim 22, wherein receiving the indication that the target cell is presently unavailable comprises receiving the indication from the target BS via an inter-BSC signaling interface.
24. (Currently Amended) The method of claim 19 [[,]] further comprising:
subsequent to receiving the indication that the target cell is presently unavailable, receiving an indication that the target cell is available to provide data transmission service to the MS via the forward link of the target cell; and
sending an indication to the MS that the target cell is available to provide data transmission service to the MS via the forward link of the target cell.

25. (Currently Amended) The method of claim 15 [[,]] wherein determining whether that the target cell is presently available unavailable to provide data transmission service to the MS via the forward link of the target cell comprises sending an indication to a target BS that the MS intends to switch to the forward link of the target cell for data transmission service.
26. (Currently Amended) The method of claim 25 [[,]] wherein determining whether that the target cell is presently available unavailable to provide data transmission service to the MS via the forward link of the target cell comprises receiving, in response to the indication that the MS intends to switch, an indication that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.
27. (Previously Presented) The method of claim 15, wherein sending the indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises sending the indication to the MS via the serving cell.
28. (Cancelled)
29. (Previously Presented) The method of claim 15, wherein sending the indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises sending the indication to the MS via a forward packet data control channel (F-PDCCH) of the serving cell.
30. (Previously Presented) The method of claim 15, wherein sending the indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises sending the indication to the MS via a forward fundicated channel of a cell in an active set of the MS.

31. (Previously Presented) The method of claim 15, wherein sending the indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises sending a Universal Handoff Direction message (UHDM) that indicates that the target cell does not support a forward link.
32. (Previously Presented) The method of claim 15, wherein sending the indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises sending a Universal Handoff Direction message (UHDM) that indicates that the target cell is not part of an active set of the MS.
33. (Currently Amended) A method for a mobile station (MS) to maintain forward link packet data service in a mobile communication system, the method comprising:
 - receiving, by [[an]] the MS, data transmission service from a serving cell via a forward link of the serving cell;
 - determining, by the MS, to switch to a target cell for data transmission service via a forward link of the target cell;
 - transmitting, by the MS, an indication of an MS intent to switch to the target cell; and
 - receiving, by the MS, an indication that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.
34. (Previously Presented) The method of claim 33, wherein determining to switch to a target cell for data transmission service via a forward link of the target cell comprises performing cell selection among cells from an active set of the MS that provide forward link service.
35. (Original) The method of claim 33, wherein transmitting the indication of the MS's intent to switch to the target cell comprises transmitting the indication of the MS's intent to switch to the target cell using a switching pattern on a Reverse Channel Quality Indication Channel (R-CQICH) of the MS.

36. (Previously Presented) The method of claim 33, wherein receiving the indication that the target cell is currently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises receiving the indication by the MS via the serving cell.
37. (Previously Presented) The method of claim 33, wherein receiving the indication that the target cell is currently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises receiving the indication by the MS via a forward packet data control channel (F-PDCCH) of the serving cell.
38. (Previously Presented) The method of claim 33, wherein receiving the indication that the target cell is currently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises receiving the indication by the MS via the target cell.
39. (Previously Presented) The method of claim 33, wherein receiving the indication that the target cell is currently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises receiving a Universal Handoff Direction message (UHDM) that indicates that the target cell does not support a forward link.
40. (Previously Presented) The method of claim 33, wherein receiving the indication that the target cell is currently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises receiving a Universal Handoff Direction message (UHDM) that indicates that the target cell is not part of an active set of the MS.
41. (Previously Presented) The method of claim 33, further comprising, subsequent to receiving the indication that the target cell is currently unavailable, receiving an indication that the target cell is available to provide data transmission service to the MS via the forward link of the target cell.

42. (Currently Amended) A base station (BS) comprising:
 - a base transceiver system (BTS) to provide communication services to a mobile station (MS), including data transmission via a forward link; and
 - a base site controller (BSC), communicatively coupled to the BTS, to provide data for transmission by the BTS to the MS via the forward link, to receive, via the BTS, an indication that the MS intends to switch from the forward link to a forward link of a target cell for data transmission service, to determine whether that the target cell is presently available unavailable to provide data transmission service to the MS via the forward link of the target cell, and to send, via the BTS, an indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.
43. (Currently Amended) The BS of claim 42 [[,]] wherein the BSC receives an indication that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell when determining whether that the target cell is presently available unavailable to provide data transmission service to the MS via the forward link of the target cell.
44. (Currently Amended) The BS of claim 42 [[,]] wherein the BSC sends an indication to a target BS that the MS intends to switch to the forward link of the target cell for data transmission service when determining whether that the target cell is presently available unavailable to provide data transmission service to the MS via the forward link of the target cell.
45. (Previously Presented) The BS of claim 42, wherein the BSC sends, via the BTS, a Universal Handoff Direction message (UHDM) that indicates that the target cell does not support a forward link when sending the indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.

46. (Previously Presented) The BS of claim 42, wherein the BSC sends, via the BTS, a Universal Handoff Direction message (UHDM) that indicates that the target cell is not part of an active set of the MS when sending the indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.
47. (Previously Presented) The BS of claim 42, wherein the BSC sends the indication to the MS via a forward packet data control channel (F-PDCCH) of the serving cell.
48. (Currently Amended) A mobile station (MS) comprising:
 - a transceiver; and
 - a computer processor having computer executable instructions therein, communicatively coupled to the transceiver, to receive, via the transceiver, data transmission service from a serving cell via a forward link of the serving cell, to determine to switch from the serving cell to a target cell for data transmission service via a forward link of the target cell, to transmit, via the transceiver, an indication of the MS's intent to switch to the target cell, and to receive, via the transceiver, an indication that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.
49. (Previously Presented) The MS of claim 48, wherein the indication that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises a Universal Handoff Direction message (UHDM) that indicates that the target cell does not support a forward link.
50. (Previously Presented) The MS of claim 48, wherein the indication that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell comprises a Universal Handoff Direction message (UHDM) that indicates that the target cell is not part of an active set of the MS.

51. (Previously Presented) The MS of claim 48, wherein the computer processor receives, via the transceiver, the indication via a forward packet data control channel (F-PDCCH) of the serving cell.

52. (Cancelled)

Remarks

In the application, claims 15 through 27 and 29 through 51 are currently pending. No claims have been allowed.

The Final Office Action dated July 16, 2008, has been carefully considered. Claims 27 and 28 are objected to as duplicates of one another. Claims 1 through 13 and 15 through 52 are rejected under 35 U.S.C. § 102(c) as anticipated by U.S. Patent 6,757,270 ("Kumar"). (The Office Action actually says that claims 1 through 14 and 16 through 52 are rejected as anticipated by Kumar, but the above listing is what was clearly meant.)

Amendments to the Claims

Claims 1 through 13 and 52 are cancelled. To expedite prosecution, claim 28 is cancelled without prejudice. Claims 15, 19, 24 through 26, 33, 42 through 44, and 48 are amended for the sake of clarity.

No new matter is introduced by these amendments.

The § 102(e) Rejection

The Applicant respectfully submits that Kumar does not anticipate the pending claims, as currently amended.

Kumar teaches a network-initiated handoff of data communications traffic from one cell to another. (Generally, see Kumar, column 15, line 17, through column 16, line 20, as pointed out by the Examiner.) In a typical scenario, a mobile station is receiving data communications services from a "serving" cell (to use the terminology of the presently pending claims). The mobile station discovers that the signal strength of a "target" cell is stronger than the signal strength of the current serving cell. The mobile station informs a base site controller of this fact, and the base site controller tells the target cell to take over the task of providing data communications services to the mobile station. After a short hand-off period, where flow control can be used to ensure that data are not lost, the mobile station begins to receive its data communications services from the target cell.

There is nothing in Kumar, however, that discusses the case where the *target* cell cannot (for any reason) accept the handoff. Kumar does discuss the case where the *serving* cell will become unavailable (for example, when the mobile station is moving beyond the range of the serving cell), and thus the mobile station must begin to communicate with a different cell. (See Kumar, column 15, lines 17 through 32, as pointed out by the Examiner.) However, this is very different from the case where the mobile station is told that its *target* cell is not available.

This aspect of telling the mobile station that a *target* cell is not available is reflected in the following elements of the presently pending independent claims, as currently amended:

- Claim 15: sending an indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.
- Claim 33: receiving, by the MS, an indication that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.
- Claim 42: a base site controller . . . to send, via the BTS, an indication to the MS that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.
- Claim 48: a computer processor . . . to receive, via the transceiver, an indication that the target cell is presently unavailable to provide data transmission service to the MS via the forward link of the target cell.

Because Kumar does not teach sending a “target cell unavailability” message to the mobile station, the applicant submits that the independent claims, as currently amended, are patentable over Kumar. The pending dependent claims include by reference all of the limitations of their antecedent independent claims and so are patentable for at least the same reasons as given above.

Conclusion

This application is considered to be in good and proper form for allowance, and the Applicant requests that the Examiner pass this application on to issue. If, in the opinion of the

Examiner, a telephone conference would expedite the prosecution of this application, the Examiner is invited to call the Applicant's representative at the number given below.

Please charge any fees that may be due to Deposit Account 502117, Motorola, Inc.

Respectfully submitted,

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